Remarks

Claims 1-14 and 20 are pending in the present application. By this Amendment, Claims 10-11 are canceled and new Claims 21-32 are added. Applicants thank Examiner Tran for the courtesy of conducting a personal interview with applicants' attorney, Sandra K. Szczerbicki, and applicant Dr. William Doane on Tuesday, July 12, 2005.

I. Amendment to the Specification and Claims

It is submitted that the amendments to the specification and claims are supported by the originally filed application and do not add new matter.

Specifically, Claim 1 has been amended to recite "forming granules of superabsorbent polymer product by pelletizing the starch graft copolymer, the granules having a size that is between about 5 mesh and about 25 mesh and a density that is between about 30 pounds per cubic foot and about 35 pounds per cubic foot." Support for the recitation of pelletizing in Claim 1 can be found in paragraph [0021] of the application and elsewhere. Support for the recitation of a size between about 5 mesh and about 25 mesh can be found in originally filed Claims 10-12 and in paragraph [0014]. Support for a density that is between about 30 pounds per cubic foot and about 35 pounds per cubic foot can be found in paragraph [0014].

Newly added independent Claim 21 recites "forming granules of superabsorbent polymer product by passing the starch graft copolymer through a die plate." Support for this recitation in Claim 21 can be found in paragraph [0024].

II. Claims 11-12

Claims 11 and 12 stand rejected under 35 U.S.C. § 112, first paragraph. Upon canceling Claims 10 and 11 and amending Claim 12 to depend from Claim 1, it is submitted that the rejection is moot and that Claim 12 complies with the requirements of § 112.

III. Section 102/103

Claims 1-14 and 20 stand rejected under 35 U.S.C. § 102(b) for anticipation by U.S. 4,134,863 to Fanta et al. ("Fanta '863") and by U.S. 4,323,487 to Jones et al. ("Jones '487"). The 1/11/05 Office Action at page 4, asserts that Fanta and Jones teach granularizing of the absorbent copolymer, but this statement is respectfully traversed. When examining the teachings of Fanta '863 and Jones '487, we must look to what compositions that they indeed teach to be formed and the processes taught for making the composition.

A. Claims are not anticipated by Fanta '863

First, Fanta '863 does not disclose the step of "forming granules of superabsorbent polymer product" or the step of "pelletizing the starch graft copolymer" as in Claim 1. Instead, Fanta '863 describes the formation of films of absorbent composition. The films produced in Fanta '863 differ from granules formed in Claim 1, one difference being that the films are more akin to two-dimensional structures whereas granules are three-dimensional structures. Fanta '863 describes forming these films by the following methods: (1) spreading "the swollen rubbery solid . . onto a 'Teflon' tray and allow[ing it] to air dry to a film" (col. 8, line 30 and similarly described in Examples 1, 3, 4, 5, 6, 8, 9, 10); (2) "drum dr[ying]" (col. 13, line 20 and similarly described in Examples 29, 31, and 33); and (3) "air dr[ying] to give a film" (col. 13, line 10 and similarly described in Examples 25, 27, 29, 31, 33, 34, 36, 37, 38, and 40). All of these methods form what are (essentially two-dimensional) films of absorbent composition. Thus this disclosure in Fanta '863 of forming films of absorbent composition (even if they are small-sized flakes of film), does not teach this step of "forming granules" as in Claim 1.[1]

Fanta '863 refers to "films or particles of . . . absorbent compositions" (col. 7, line 50) and "[s]wollen polymer particles" (col. 8, line 42), but the only particles of these examples are films. Thus Fanta '863 does not disclose either the method or the result of

[1] Examiner's attention is also directed to paragraphs 17 and 18 of the February 22, 2005 Declaration of Dr. William Doane (an inventor named in Fanta) stating that "Wiley-milling [a] film of absorbent composition . . . will not produce a granular form of the absorbent composition" and "[i]t is, in fact, impossible to form granules of starch graft copolymer by Wiley-milling films of absorbent composition."

the steps of "forming granules of superabsorbent polymer product by pelletizing the starch graft copolymer" as in Claim 1.

Second, Fanta '863 does not disclose granules of superabsorbent polymer product "having a size that is between about 5 mesh and about 25 mesh" as in Claim 1 and newly added independent Claim 21. The disclosure in Fanta '863 of Wiley-milling films to form smaller-sized films capable of passing through a 20-mesh screen (col. 8, lines 34-35) is not the same as pelletizing the starch graft copolymer (as in Claim 1) or passing the starch graft copolymer through a die plate (as in Claim 21) thereby forming granules of superabsorbent polymer product having a size that is between about 5 mesh and about 25 mesh. The reason that Fanta '863 discloses running its product through a 20-screen mesh was to remove from the final product large particles of unreacted absorbent composition. Consequently, the end product consisted solely of smaller-sized flakes. In contrast, the method of Claim 1 seeks to produce a composition of granules of superabsorbent polymer product having a size that would have been separated out and discarded from the product of Fanta '863.

Third, Fanta '863 does not describe granules of superabsorbent polymer product "having a . . . density that is between about 30 pounds per cubic foot and about 35 pounds per cubic foot" as recited in Claims 1 and Claim 21. At no time does Fanta '863 describe the density of its absorbent composition. Further, the density of the films of Fanta '863 would not inherently fall within the recited density range because the density of films is significantly less than the density of granules.

In addition, Fanta '863 does not describe a process of "passing the starch graft copolymer through a die plate" to form granules of superabsorbent polymer product, as recited in newly added independent Claim 21. Instead, Fanta '863 only describes processes that form films of absorbent composition. These films have physical structure that differs from the three-dimensional structure of the recited granules formed by passing the starch graft copolymer through a die plate. For this additional reason, it is submitted that Claim 21 is not anticipated by Fanta '863.

Not having all the limitations of the claims, it is submitted that Claims 1, 20 and 21 are not anticipated by Fanta '863.

B. Claims are not anticipated by Jones '487

It is submitted that Jones '487 does not disclose all of the elements of Claims 1, 20 or 21. Jones '487 does not disclose "forming granules of superabsorbent polymer product by pelletizing the starch graft copolymer, the granules having a size that is between about 5 mesh and about 25 mesh and a density that is between about 30 pounds per cubic foot and about 35 pounds per cubic foot" (as in Claims 1 and 20) or "forming granules of superabsorbent polymer product by passing the starch graft copolymer through a die plate, the granules having a size that is between about 5 mesh and about 25 mesh and a density that is between about 30 pounds per cubic foot and about 35 pounds per cubic foot" (as in new Claim 21).

Claim 1 recites "pelletizing the starch graft copolymer" and independent Claim 21 recites "passing the starch graft copolymer through a die plate." Jones '487 does not teach the use of either of these processes of forming granules. Instead, Jones '487 states that "[t]he absorbent polymer can be made as film, flakes, powder, or mat" (col. 1, lines 44-45). Thus not only does Jones '487 fail to disclose the step of forming granules, Jones '487 does not disclose a step of pelletizing to form whatever type of particle (film, flake, powder, mat) he describes.

The 1/11/05 Office Action refers to certain statements of Jones '487 refers to "granulation of the product" (col. 2, line 11) and "the dry granular form of hydrolyzed starch polyacrylonitrile graft copolymer" (col. 4, lines 11-13). The Examiner relies on these references in Jones '487 to assert that Jones '487 teaches a granular starch graft copolymer starting product to which Jones '487 teaches adding a cross-linking formaldehyde. This assumption is respectfully traversed. All of the examples in Jones '487 use the same starch graft copolymer starting product: "a hydrolyzed starch polyacrylonitrile graft copolymer sold under the trade name SGP® 502S by Henkel Corporation." A sample of this product was shown to the Examiner in the July 12, 2005 interview demonstrating that the product was a fine powder rather than a granular product having "a size that is between about 5 mesh and about 25 mesh" or "a density that is between about 30 pounds per cubic foot and about 35 pounds per cubic foot," as recited in independent Claims 1 and 21.

Further, it is submitted that Jones '487 contains no disclosure of forming a granular product of any specific mesh size, but especially not of "a size that is between about 5

mesh and about 25 mesh," as recited in independent Claims 1 and 21. Thus, this rejection is traversed and is requested that a reference be cited disclosing the limitation or the rejection removed. See, MPEP § 2144.03. Thus even if there is some reference to granulation, Jones '487 is not enabled to forming granules of specific size. "To serve as an anticipating reference, the reference must enable that which it is asserted to anticipate. 'A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled,'" *Elan Pharms., Inc. v. Mayo Found. for Med. Educ. & Research*, 346 F.3d 1051, 1054 (Fed. Cir. 2003) (citation omitted);(*see also Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1374, 58 USPQ2d 1508, 1512 (Fed. Cir. 2001) ("To anticipate, the reference must also enable one of skill in the art to make and use the claimed invention."). Enablement requires that "the prior art reference must teach one of ordinary skill in the art to make or carry out the claimed invention without undue experimentation." *Minn. Mining & Mfg. Co. v. Chemque, Inc.*, 303 F.3d 1294, 1306, 64 USPQ2d 1270, 1278 (Fed. Cir. 2002). "The determination of what level of experimentation is 'undue,' so as to render a disclosure non-enabling, is made from the viewpoint of persons experienced in the field of the invention." *Elan Pharms.*, 346 F.3d at 1055. In addition, the Examiner's attention is directed to paragraphs 31-33 of the February 22, 2005 Declaration of William M. Doane in which Dr. Doane stated that "As one of skill in the art, I declare that, at the time of filing of the Jones patent application, no method of forming granules of precipitated starch graft copolymer was known in the art. Thus the formation of granules of superabsorbent product was not well known in the art."

Additionally, Jones '487 does not describe a superabsorbent polymer product having "a density that is between about 30 pounds per cubic foot and about 35 pounds per cubic foot," as recited in Claims 1 and 21. At no time does Jones '487 describe the density of his absorbent composition. It is submitted that the density of the fine powder SGP® 502S used in every example in Jones '487 would not inherently fall within the recited density range because the density of powders is significantly greater than the density of granules. For this additional reason, Jones '487 does not anticipate Claims 1, 20 or 21.

C. Dependent claims

It is also submitted that dependent Claims 2-9, 12-14 and 22-32 should also not be anticipated by either Fanta '863 or Jones '487.

D. No *Prima Facie* case of obviousness can be made

Since the cited patents also fail to include certain limitations of the claims, it is submitted that a *prima facie* case of obviousness cannot be made. Thus it is submitted that Claims 1-9, 12-14 and 20-32 should be non-obvious and allowable.

To support certain factual assertions made in this Amendment, applicants are willing to submit, at the Examiner's request, a declaration of one of ordinary skill in the art under 37 C.F.R. § 1.132.

IV. Conclusion

Therefore it is respectfully submitted that Claims 1-9, 12-14 and 20-32 are allowable and a Notice of Allowance is earnestly solicited. In the event that the Examiner believes there are any issues outstanding, the Examiner is invited to contact the undersigned by telephone.

Respectfully submitted,

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Date: July _____, 2005

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